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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,330	01/30/2004	Georg Ickinger	5140-16PCON	6521

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EXAMINER

JONES, JUDSON

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/768,330

**Applicant(s)**

ICKINGER, GEORG

**Examiner**

Judson H. Jones

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☒ Claim(s) 5 and 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 013004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claim 7 is objected to because of the following informalities: According to this claim, the pretension force is greater than the maximum axial thrust of the machine. Page 8 of the specification states "The spindle nut, which is prevented from rotating, thus converts the rotational movement of the spindle shaft 7 into axial movement and thus controls the reciprocating ..." However, since the pretension force is greater than the maximum axial thrust, it is not clear how axial movement is possible. Appropriate correction or clarification is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over European reference 0 723 848 B (cited by Applicant) in view of Potter 3,508,241 A (cited by Applicant). European reference '848 discloses an electromechanical linear drive for an injection molding machine having a motor housing, hollow rotors 47, 49 with an open and a closed end, a gear 62 and bearings 51, 52, 53, 54 for transverse forces and bearings 66, 73 for axial forces but does not disclose an anti-contact device. Potter teaches an anti-contact device in column 2 lines 37-55 comprising auxiliary bearings 25, 35 located at both ends of the rotor. European reference '848 has bearings at both the open and closed ends of the rotor. Since Potter and European reference '848 are from the same field of endeavor it would have been obvious at the time the

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invention was made for one of ordinary skill in the art to have utilized auxiliary bearings in the linear drive of European reference '848 and to have placed those auxiliary bearings at both the open and closed ends of the rotor.

In regard to claims 2 and 4, see Potter column 2 lines 37-55.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over European reference '848 as modified by Potter as applied to claim 1 above, and further in view of German reference 39 41 444 (cited by Applicant). European reference '848 as modified by Potter discloses the linear drive but does not disclose a fluid dynamic bearing or a magnetic bearing. German reference teaches '444 teaches non-contact bearings 7, 8 as shown in figure 3 and as described in 3 lines 64 to column 4 line 11. Since German reference '444 and European reference '848 are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized non contact bearings in the linear drive of European reference '848 as modified by Potter.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over European reference '848 as modified by Potter as applied to claim 1 above, and further in view of Bolyard, Jr. et al. 6,334,554 B1. European reference '848 as modified by Potter discloses the linear drive but does not disclose three radial bearings uniformly distributed about the rotor. Bolyard, Jr. et al. teaches three radial bearings about a rotating part in column 6 lines 38-44 and as shown in figure 3. Since Bolyard, Jr. et al. and European reference '848 as modified by Potter address the same problem of economically providing for bearings to support a rotating structure, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have

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utilized the three bearing member solution of Bolyard, Jr. et al. in a linear drive device for an injection molding machine.

***Allowable Subject Matter***

Claims 5 and 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, provided the objection to claim 7 is overcome.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or teach a contact sensor mounted at a distance smaller than the magnet gap distance as recited in claim 5. Potter appears to show the contact sensor mounted at the same distance as the air gap distance in column 2 lines 22-36. Lis 5,289,042 (cited by Applicant) shows a plurality of circumferentially spaced roller bearing cages. Putting anti-contact sensors on each of the bearing cages of Lis would produce a contact sensor mounted at a distance smaller than the gap distance. However no motivation has been found for combining Lis with European reference '848 as modified by Potter. The prior art of record does not disclose or teach a pretensioning force greater than the maximum axial thrust of a linear drive. Schell 5,210,653 A teaches adjusting the pretension force on a axial machine in column 3 lines 15-37 but does not teach making the pretension force greater than the maximum axial thrust of the machine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H. Jones whose telephone number is 571-272-2025. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHJ 9/29/2004

  
THANH LAM  
PRIMARY EXAMINER